

WHAT IS CLAIMED IS:

1. A communication network part or element comprising: an interface for coupling a cellular telephone network to a further network, the interface
5 having a circuit for causing signalling-information exchange between the cellular telephone network and the further network and for causing user or payload information exchange between the cellular telephone network and the further network;
- 10 a first layer for transferring signalling information assigned to a telephone call being processed in the cellular telephone network; and
- a second layer for transferring payload information assigned to the telephone call being coupled to the
15 interface, wherein
- the second layer comprises:
- an information frame generating and suppressing station for generating an information frame with a receive sequence number and comprising user
20 information of the telephone call and being transferred to and from the interface on a direct route assigned to the telephone call within the second layer, and for

suppressing transfer of an information frame within the second layer if the information frame does not include any user information, and

5 a radio network comprising a rate adaptation function for a rate adaptation of the payload information transfer assigned to the telephone call.

2. A communication network element as in claim 1, wherein the second layer of the cellular telephone network comprises a plurality of base transceiver stations, and wherein a base transceiver station is directly connected to the interface for user information exchange within the second layer, and wherein the base transceiver station comprises said frame generating and suppressing station.

15 3. A communication network element as in claim 2, wherein the interface comprises media gateway unit for user information exchange between the cellular telephone network and the further network and to be coupled directly to the base transceiver stations, and wherein
20 the media gateway unit comprises the frame generating and suppressing station.

4. A communication network element as in claim 1,
wherein an information frame discloses specifying
information that the information frame does not provide
any user information and wherein the information frame
5 generating and suppressing station discards an
information frame received if it comprises the
specifying-information.

5. A communication network element as in claim 1,
wherein an information frame includes a receive-sequence
10 number that designates the next information frame to be
sent, and wherein the information frame generating and
suppressing station discards a current information frame
if a receive sequence number of the current information
frame is equal to a receive-sequence number of a
15 previous information frame received.

6. A communication network element as in claim 1,
including a radio link protocol (RLP) for generating
radio link protocol frames for data transmission, said
RLP being implemented in the information frame
20 generating and suppressing station.

7. A communication network element as in claim 1,
wherein

the second layer comprises: a first protocol stack
and is implemented in a mobile station, a second
5 protocol stack which is implemented in a base
transceiver station and a third protocol stack which is
implemented in a media gateway of the interface, wherein
the first, second and third protocol stacks are
established to provide a transmission of user data
10 within the second layer in an uplink and downlink
direction of data transmission.

8. A communication network element as in claim 1
wherein transmission of user data provided by a
communication network is an asynchronous non-transparent
15 bearer service.

9. A communication network element as in claim 1,
wherein the transmission of user data provided by a
communication network is a synchronous non-transparent
bearer service.

10. A communication network element as in claim 1,
wherein transmission of user data provided by a
communication network is an asynchronous transparent
bearer service.

5 11. A communication network element as in claim 1,
wherein transmission of user data provided by a
communication network is a synchronous transparent
bearer service.

12. A communication network element as in claim 1
10 wherein transmission of user data provides HSCSD (High
Speed Circuit Switched Data) bearer services, for which
a first protocol stack is implemented in a mobile
station and a second protocol stack is implemented in a
base transceiver station containing a S/C
15 (Split/Combine) function.

13. A communication network element as in claim 1
wherein in a synchronous bearer service mode bits of
data stream are transmitted regularly and continuously
on the basis of a time clock and, in an asynchronous

bearer service mode, transmission of bits is not aligned on a regular time clock.

14. A communication network element, as in claim 1, wherein non-transparent bearer service provides a reliable data transmission and wherein transparent bearer service does not guarantee a reliable data transmission.

15 14. A communication network element as in claim 14, wherein in a reliable data transmission mode a RLP (Radio Link Protocol) is available.

16. A communication network element as in claim 3, wherein the radio network comprises base transceiver stations.

15 16. A communication network element as in claim 16, including an adaptive circuit for causing radio adaptation of the payload information transfer assigned to the telephone call towards a mobile station, said radio adaptation being performed in base transceiver stations.

18. A communication network element as in claim
16, including an adaptive circuit for causing radio
adaptation of the payload information transfer assigned
to the telephone call towards the media gateway, said
5 radio adaptation being performed in the base transceiver
stations.

~~19~~. A method for operating a communication network
element in a cellular telephone network which handles
telephone calls and signalling information using:

10 a radio network;

an interface for coupling the cellular telephone
network to a further network, the interface performing
signalling information exchange function between the
cellular telephone network and the further network, and
15 performing user or payload information exchange function
between the cellular telephone network and the further
network and including

a first layer for transferring signalling
information assigned to a telephone call being processed
20 in the cellular telephone network and

a second layer for transferring payload information assigned to the telephone call being coupled to the interface, wherein the method comprises the steps of:

selectively generating and suppressing within the
5 second layer an information frame comprising user information of the telephone call and being transferred to and from the interface on a direct route assigned to the telephone call within the second layer;
suppressing transfer of an information frame within the
10 second layer if the information frame does not include any user information, and

adapting a transfer rate of said payload information assigned to the telephone call within the radio network.

15 20. The method of claim 19, wherein an information frame comprises specifying-information specifying that the information frame does not provide any user information and wherein the information frame suppressing function discards an information frame
20 received if it includes the specifying-information.

21. The method as in claim 19, wherein an information frame comprises a receive sequence number that designates a next information frame to be sent, and wherein the information frame suppressing function
5 discards a current information frame if the receive sequence number of the current information frame is equal to the receive sequence number of the previous information frame received.

22. The method as in claim 19, wherein the step of
10 adapting the transfer rate of the payload information assigned to the telephone call is performed for a telephone call within the radio network towards a mobile station.

23. The method as in claim 19, wherein the step of
15 adapting the transfer rate of the payload information assigned to the telephone call towards is performed for a telephone call within the radio network towards a base transceiver station.